

CARRERA INGENIERIA PETROLERA

PRODUCCION III

DOC. ING. MARTIN LEDEZMA

MANUAL DE EJERCICIOS PIPESIM

ESTUDIANTES: BLADIMIR CHAMBI COCHI A12484-2

CURSO: OCTAVO SEMESTRE

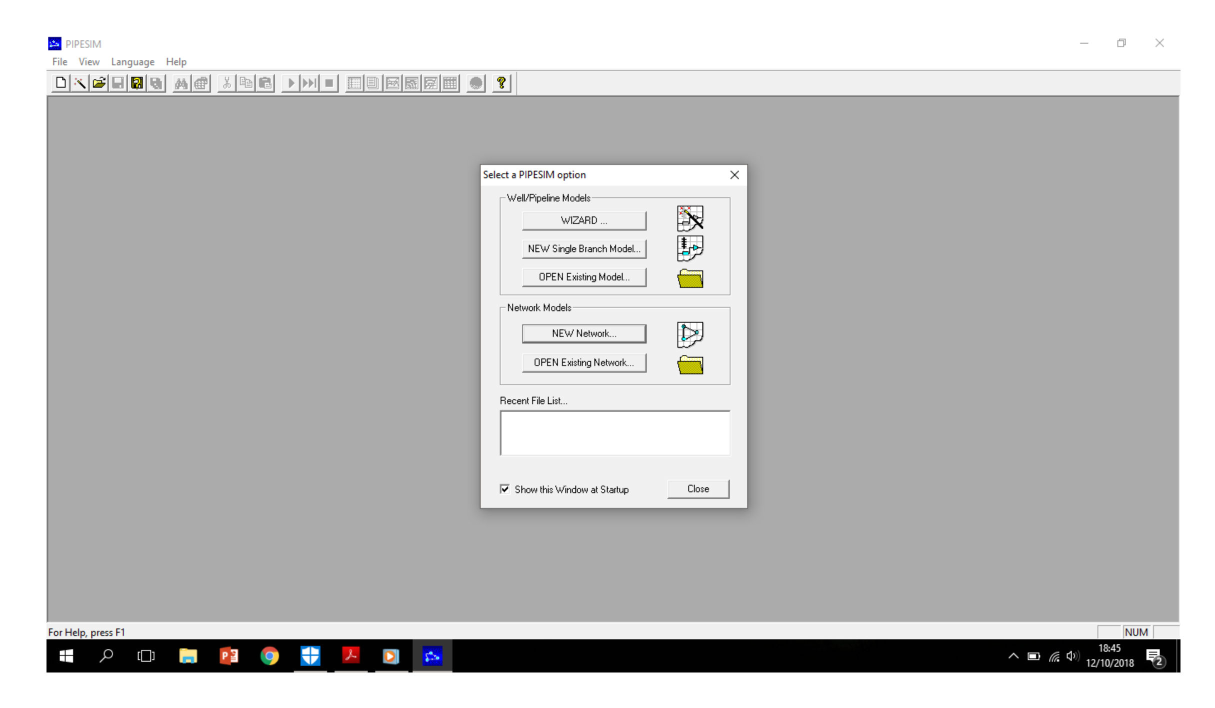
COCHABAMBA – BOLIVIA

EJERCICIO 1

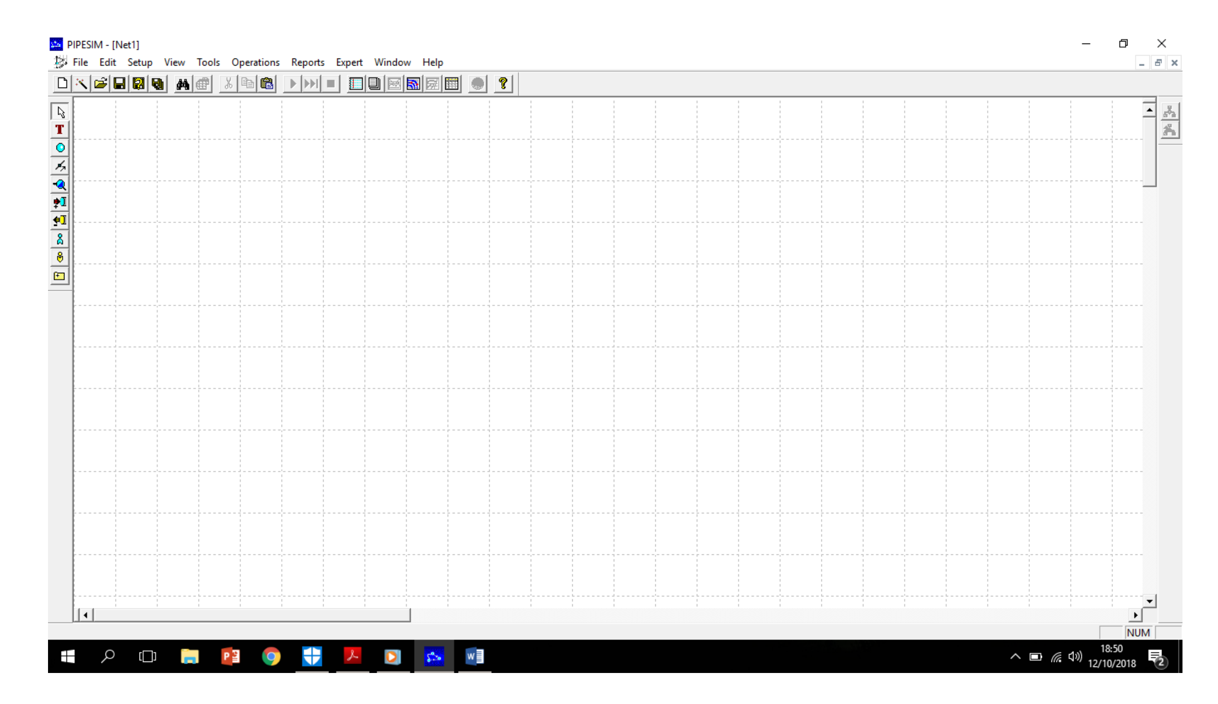
Modelando una tubería de agua con

Cálculos de la mano

- Entramos en el programa y seleccionamos single branch model



Nos aparece la siguiente pantalla

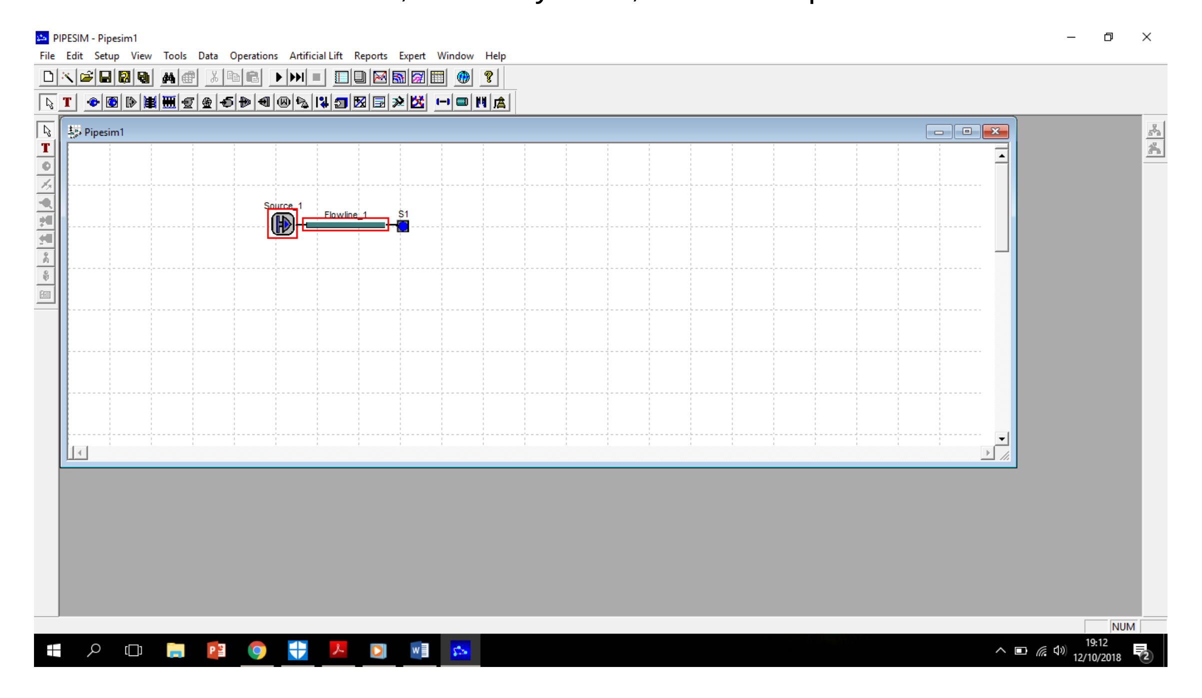


- con los siguientes datos realizaremos el procedimiento

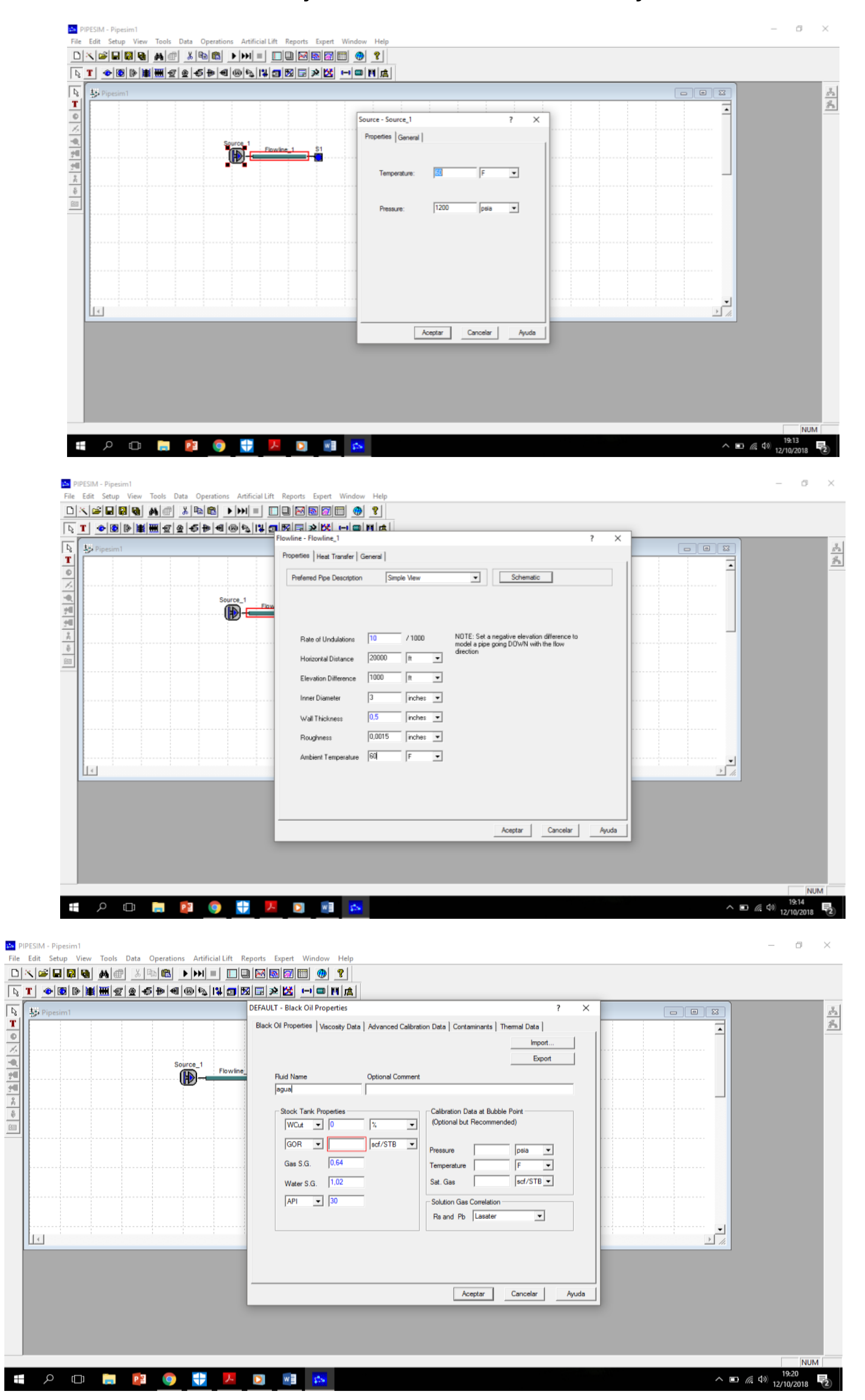
Table 1: Water Pipeline Modelling Data

Pipeline Data				
Diameter	d	3	in	(= 0.25 ft)
Length	L	20,025	ft	
Elevation Change	Z	1,000	ft	
Horizontal Distance	X	20,000	ft	
Ambient Temperature	T_{amb}	60	degF	
Inclination Angle	q	2.866	°	(=.05002 radians)
Roughness	e	0.0015	in	
Relative Roughness	e/d	0.0005	in	
Fluid Data				
Water viscosity	μ_w	1.2	cp	(= 8.06e-4 lb/ft-s)
Water density	ρ_w	63.7	lbm/ft^3	
Operating Data				
Source Temperature	T_{inlet}	60	degF	
Inlet Pressure	P_{in}	1,200	psia	
Water Flow rate	Q_w	6,000	BPD	(= 0.39 ft^3/s)
Constants				
Gravitational	g	32.2	ft/s^2	

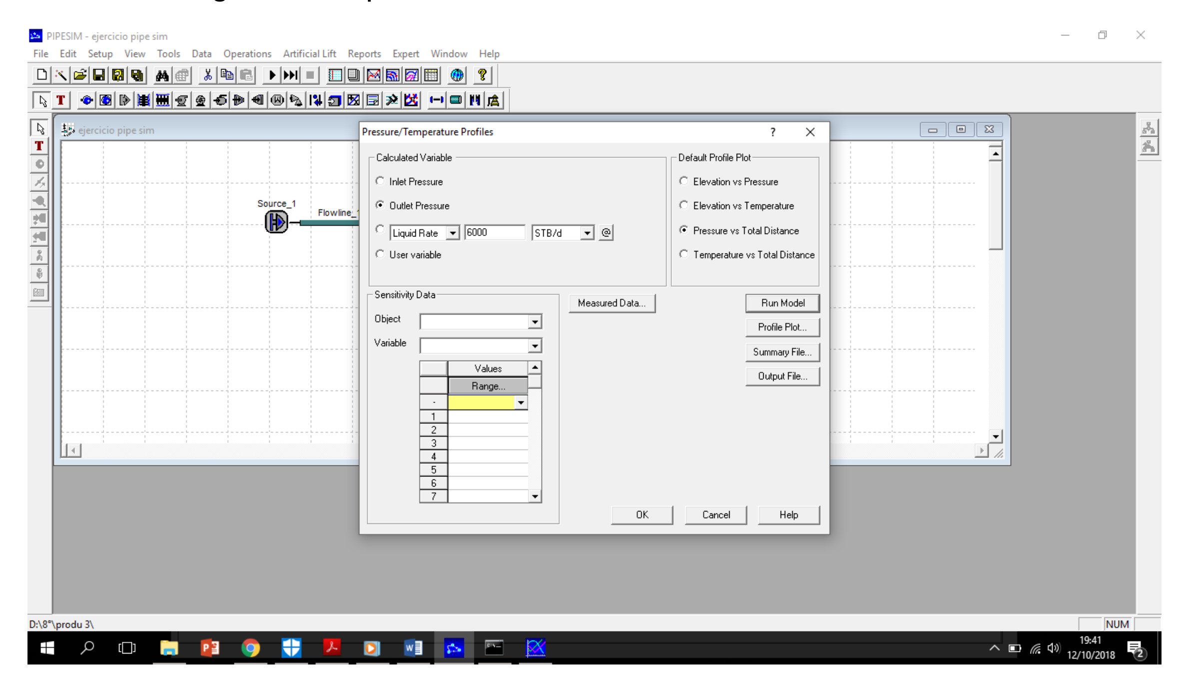
- seleccionamos source, boundary noud, flowline respectivamente los unimos



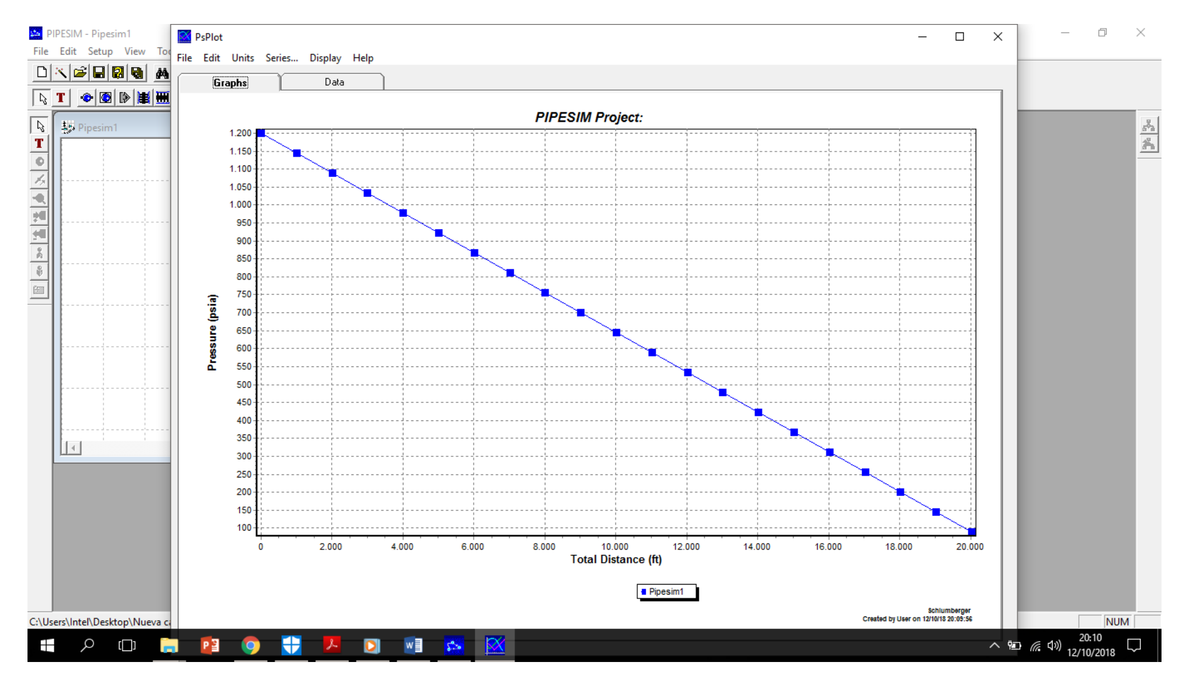
- introducimos datos del ejercicio en source, flowline y del fluido



- no dirigimos a la pestaña de condiciones de fluido



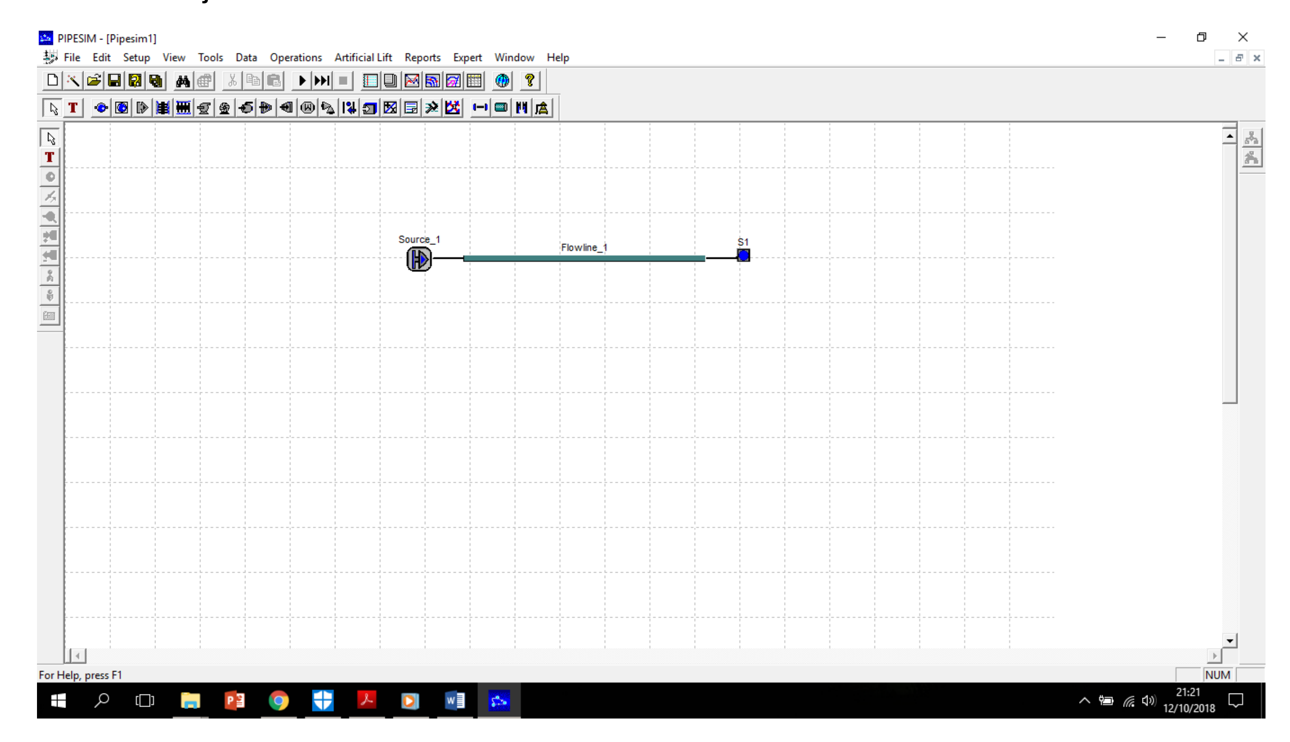
- damos click en run model y nos brindara los resultados deseados



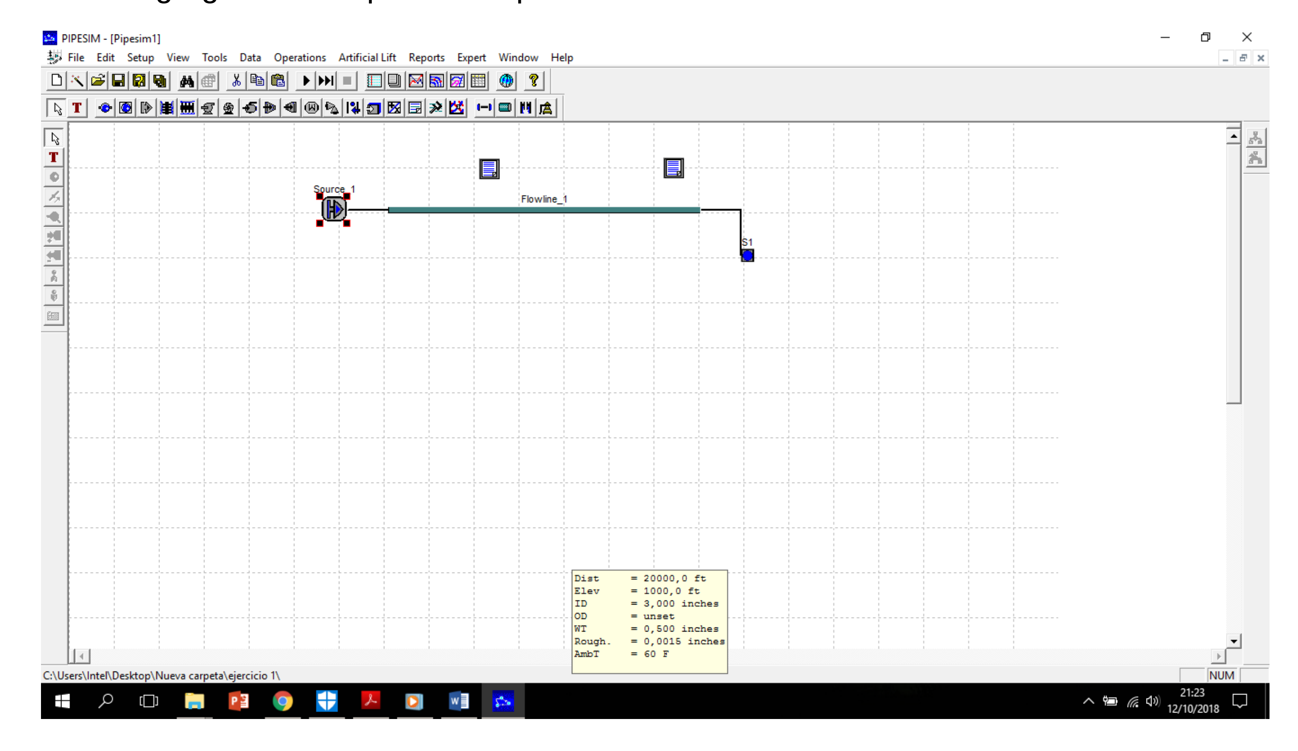
EJERCICIO 2

Modelando una tubería multifase

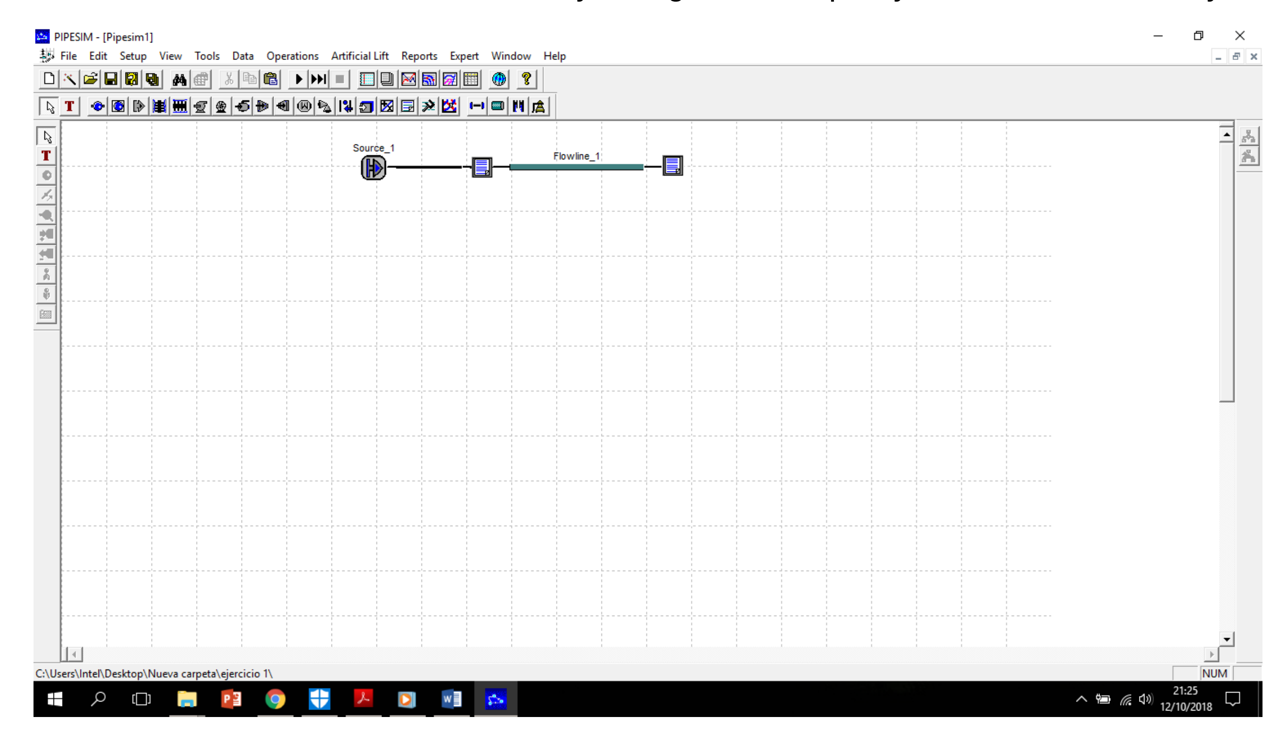
- del ejercicio anterior se tomaran los mismos datos de tubería



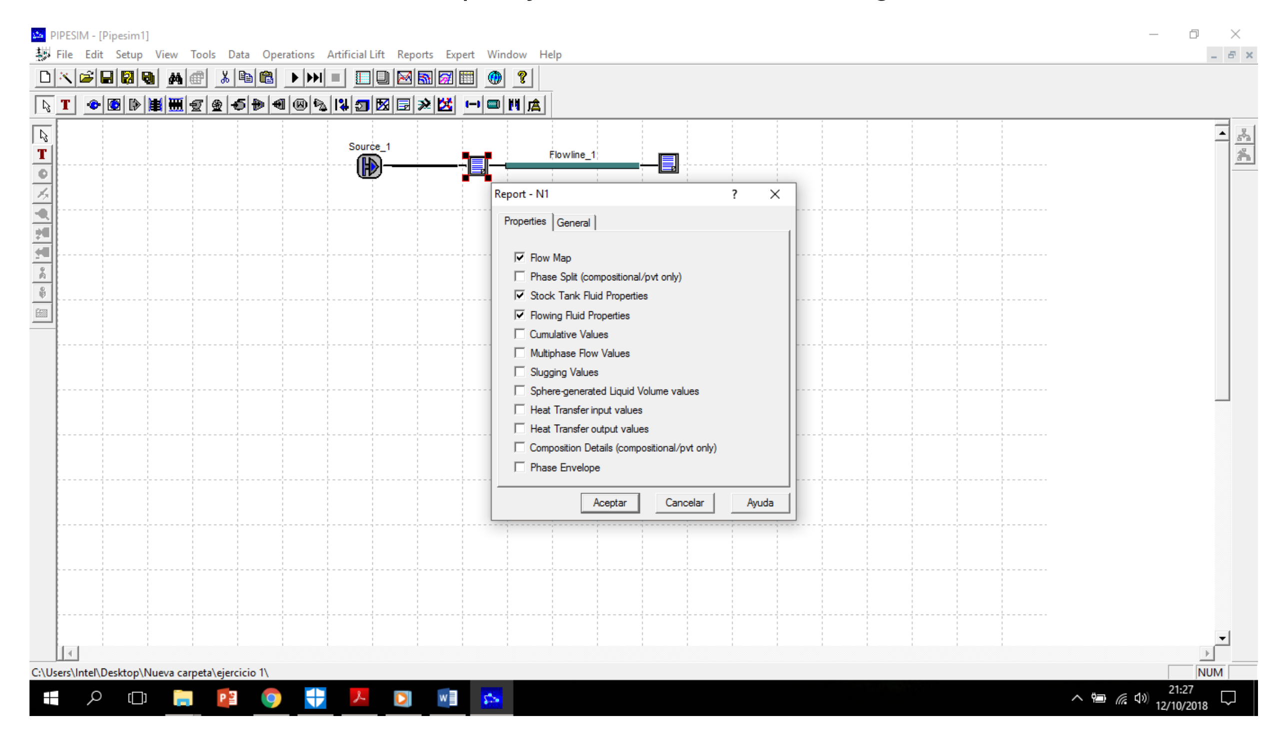
- agregamos a la pantalla report de las herramientas



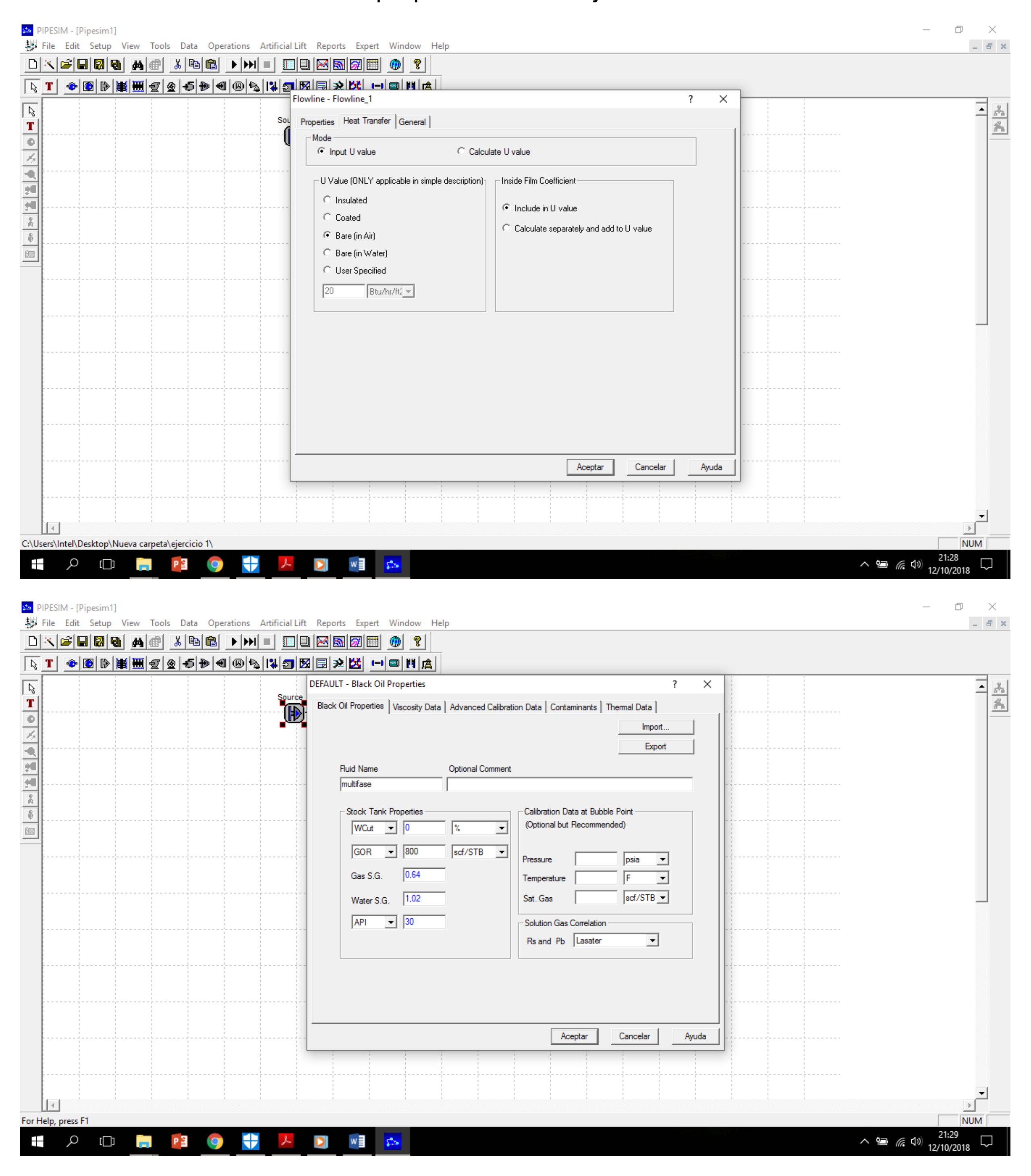
- unimos los enlaces con source y las figuras de report y eliminamos boundary



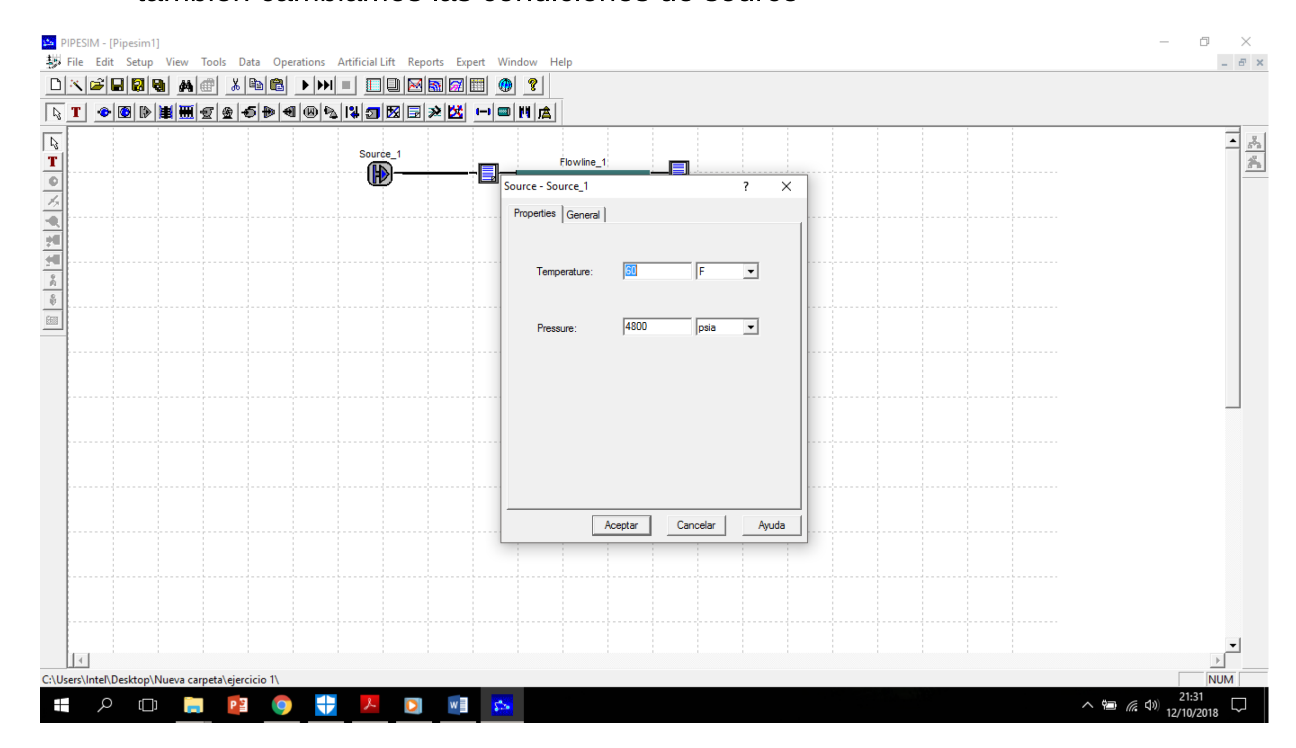
- damos doble click en report y seleccionamos de la siguiente manera



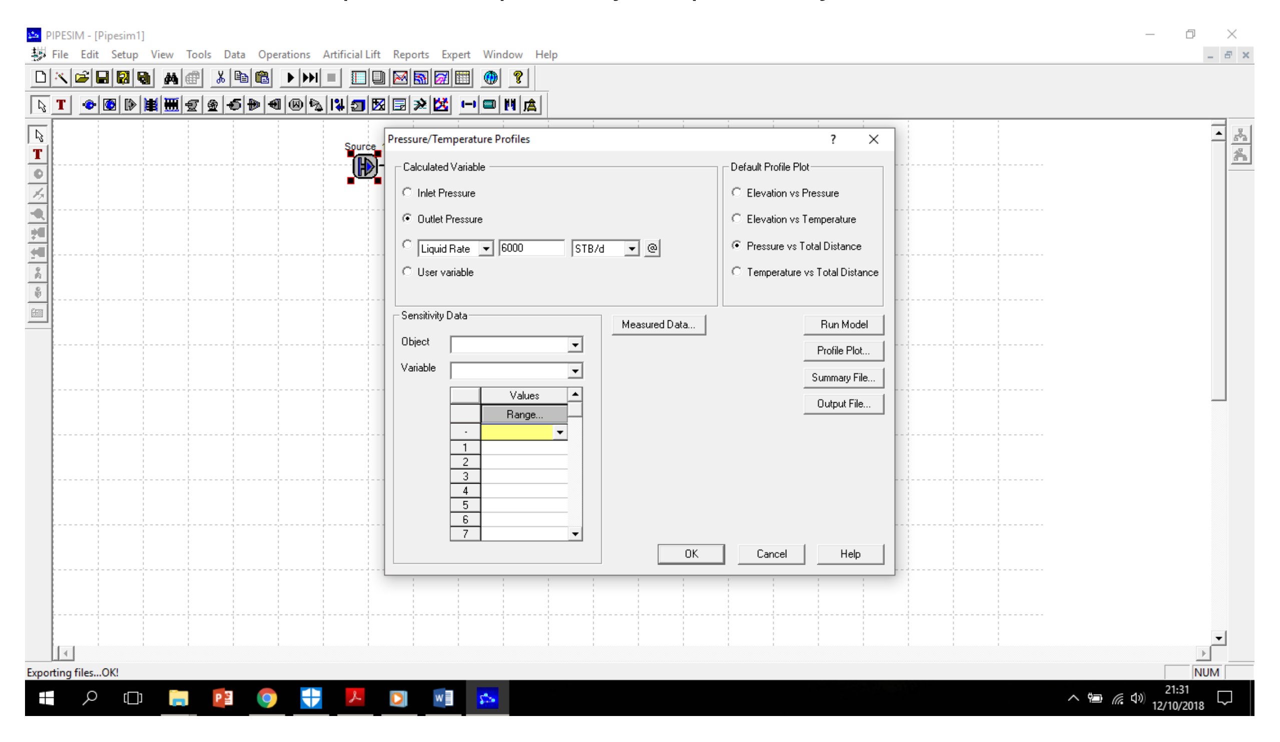
- doble click en flow line y cambiamos la transferencia de calor y luego cambiamos también las propiedades del flujo

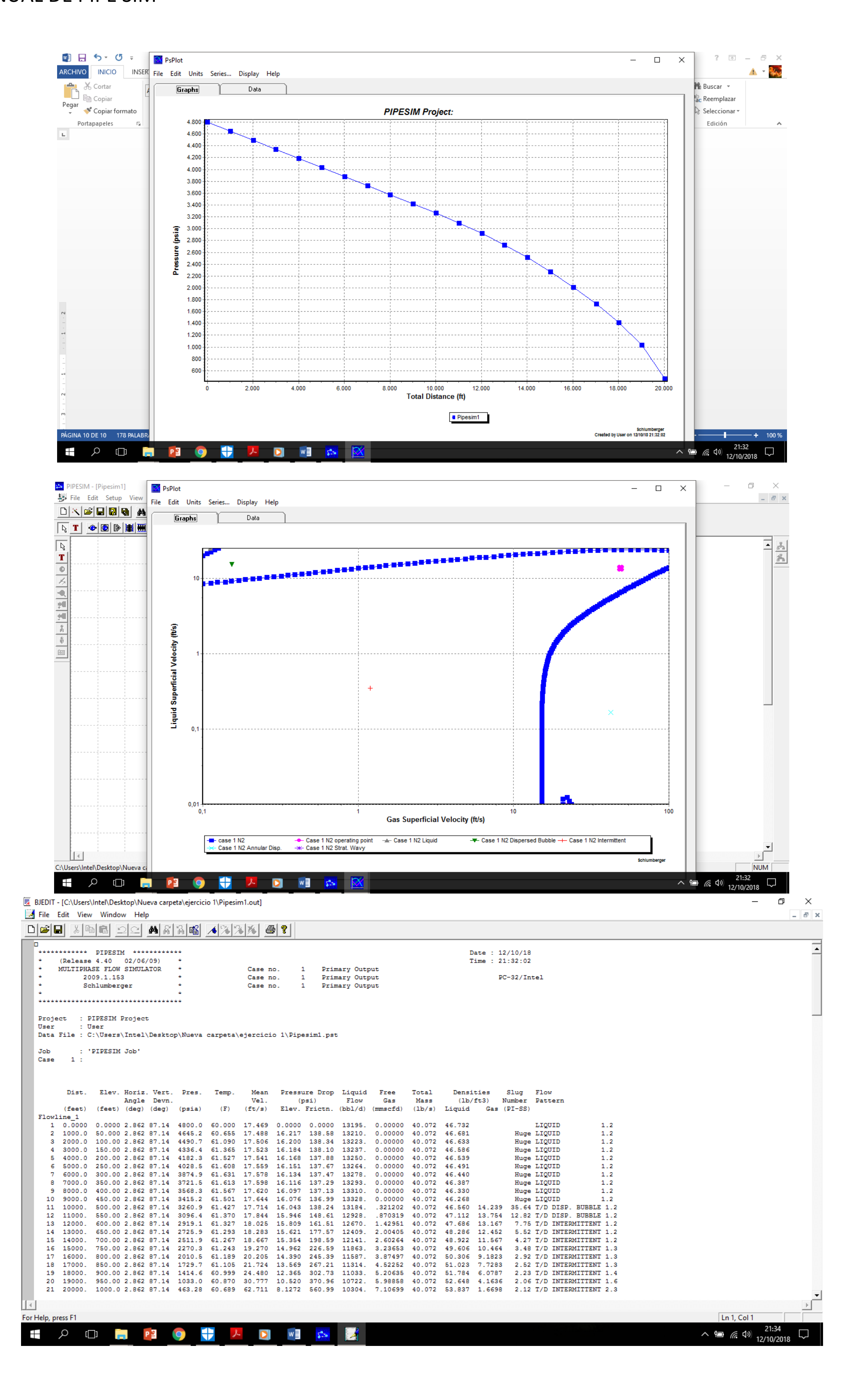


- también cambiamos las condiciones de source



- seleccionamos perfiles de presión y temperatura y click en run model






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************ PIPESIM ************                                                              Date : 12/10/18
*    (Release 4.40   02/06/09)    *                                                            Time : 21:32:02
*   MULTIPHASE FLOW SIMULATOR     *              Case no.    1   Primary Output
*         2009.1.153              *              Case no.    1   Primary Output                 PC-32/Intel
*         Schlumberger            *              Case no.    1   Primary Output
*                                 *
***********************************

Project   : PIPESIM Project
User      : User
Data File : C:\Users\Intel\Desktop\Nueva carpeta\ejercicio 1\Pipesim1.pst

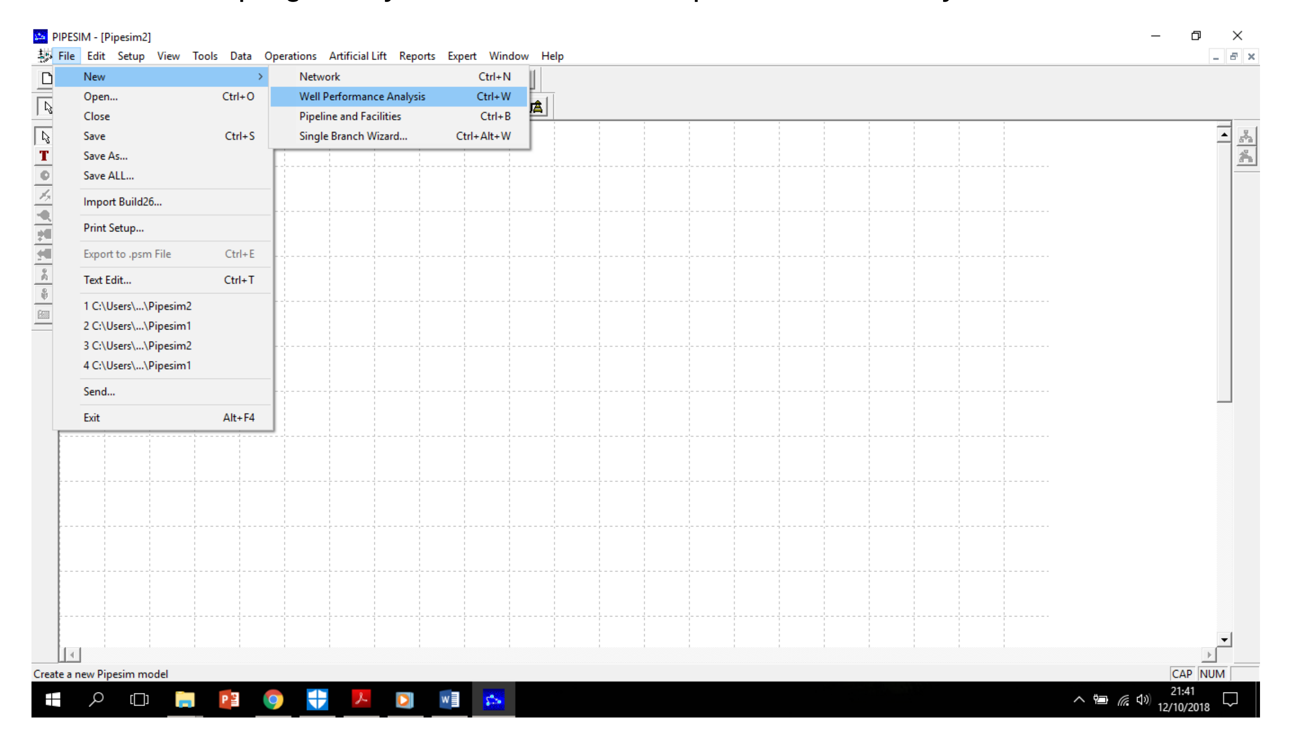
Job       : 'PIPESIM Job'
Case    1 :

      Dist.   Elev. Horiz. Vert.  Pres.   Temp.   Mean   Pressure Drop Liquid   Free    Total    Densities   Slug  Flow
                    Angle  Devn.                  Vel.       (psi)      Flow     Gas    Mass     (lb/ft3)   Number Pattern
     (feet)  (feet) (deg)  (deg)  (psia)   (F)   (ft/s)  Elev. Frictn. (bbl/d) (mmscfd) (lb/s)  Liquid    Gas (PI-SS)
Flowline_1
   1 0.0000  0.0000 2.862 87.14  4800.0  60.000  17.469  0.0000  0.0000  13195.  0.00000  40.072  46.732              LIQUID        1.2
   2 1000.0  50.000 2.862 87.14  4645.2  60.655  17.488  16.217  138.58  13210.  0.00000  40.072  46.681         Huge LIQUID        1.2
   3 2000.0  100.00 2.862 87.14  4490.7  61.090  17.506  16.200  138.34  13223.  0.00000  40.072  46.633         Huge LIQUID        1.2
   4 3000.0  150.00 2.862 87.14  4336.4  61.365  17.523  16.184  138.10  13237.  0.00000  40.072  46.586         Huge LIQUID        1.2
   5 4000.0  200.00 2.862 87.14  4182.3  61.527  17.541  16.168  137.88  13250.  0.00000  40.072  46.539         Huge LIQUID        1.2
   6 5000.0  250.00 2.862 87.14  4028.5  61.608  17.559  16.151  137.67  13264.  0.00000  40.072  46.491         Huge LIQUID        1.2
   7 6000.0  300.00 2.862 87.14  3874.9  61.631  17.578  16.134  137.47  13278.  0.00000  40.072  46.440         Huge LIQUID        1.2
   8 7000.0  350.00 2.862 87.14  3721.5  61.613  17.598  16.116  137.29  13293.  0.00000  40.072  46.387         Huge LIQUID        1.2
   9 8000.0  400.00 2.862 87.14  3568.3  61.567  17.620  16.097  137.13  13310.  0.00000  40.072  46.330         Huge LIQUID        1.2
  10 9000.0  450.00 2.862 87.14  3415.2  61.501  17.644  16.076  136.99  13328.  0.00000  40.072  46.268         Huge LIQUID        1.2
  11 10000.  500.00 2.862 87.14  3260.9  61.427  17.714  16.043  138.24  13184.  .321202  40.072  46.560  14.239 35.64 T/D DISP. BUBBLE 1.2
  12 11000.  550.00 2.862 87.14  3096.4  61.370  17.844  15.946  148.61  12928.  .870319  40.072  47.112  13.754 12.82 T/D DISP. BUBBLE 1.2
  13 12000.  600.00 2.862 87.14  2919.1  61.327  18.025  15.809  161.51  12670.  1.42951  40.072  47.686  13.167  7.75 T/D INTERMITTENT 1.2
  14 13000.  650.00 2.862 87.14  2725.9  61.293  18.283  15.621  177.57  12409.  2.00405  40.072  48.286  12.452  5.52 T/D INTERMITTENT 1.2
  15 14000.  700.00 2.862 87.14  2511.9  61.267  18.667  15.354  198.59  12141.  2.60264  40.072  48.922  11.567  4.27 T/D INTERMITTENT 1.2
  16 15000.  750.00 2.862 87.14  2270.3  61.243  19.270  14.962  226.59  11863.  3.23653  40.072  49.606  10.464  3.48 T/D INTERMITTENT 1.3
  17 16000.  800.00 2.862 87.14  2010.5  61.189  20.205  14.390  245.39  11587.  3.87497  40.072  50.306  9.1823  2.92 T/D INTERMITTENT 1.3
  18 17000.  850.00 2.862 87.14  1729.7  61.105  21.724  13.569  267.21  11314.  4.52252  40.072  51.023  7.7283  2.52 T/D INTERMITTENT 1.3
  19 18000.  900.00 2.862 87.14  1414.6  60.999  24.480  12.365  302.73  11033.  5.20635  40.072  51.784  6.0787  2.23 T/D INTERMITTENT 1.4
  20 19000.  950.00 2.862 87.14  1033.0  60.870  30.777  10.520  370.96  10722.  5.98858  40.072  52.648  4.1636  2.06 T/D INTERMITTENT 1.6
  21 20000.  1000.0 2.862 87.14  463.28  60.689  62.711  8.1272  560.99  10304.  7.10699  40.072  53.837  1.6698  2.12 T/D INTERMITTENT 2.3
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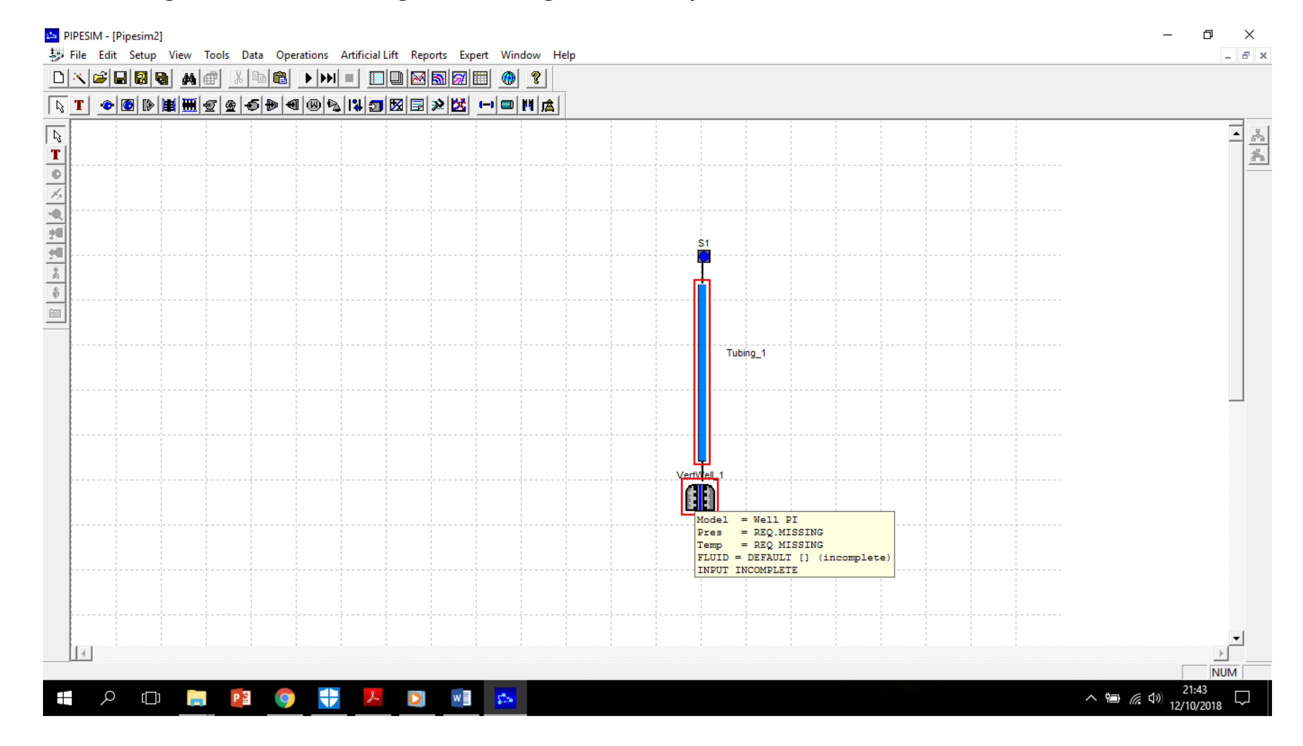
EJERCICIO 3

Construyendo el modelo de pozo

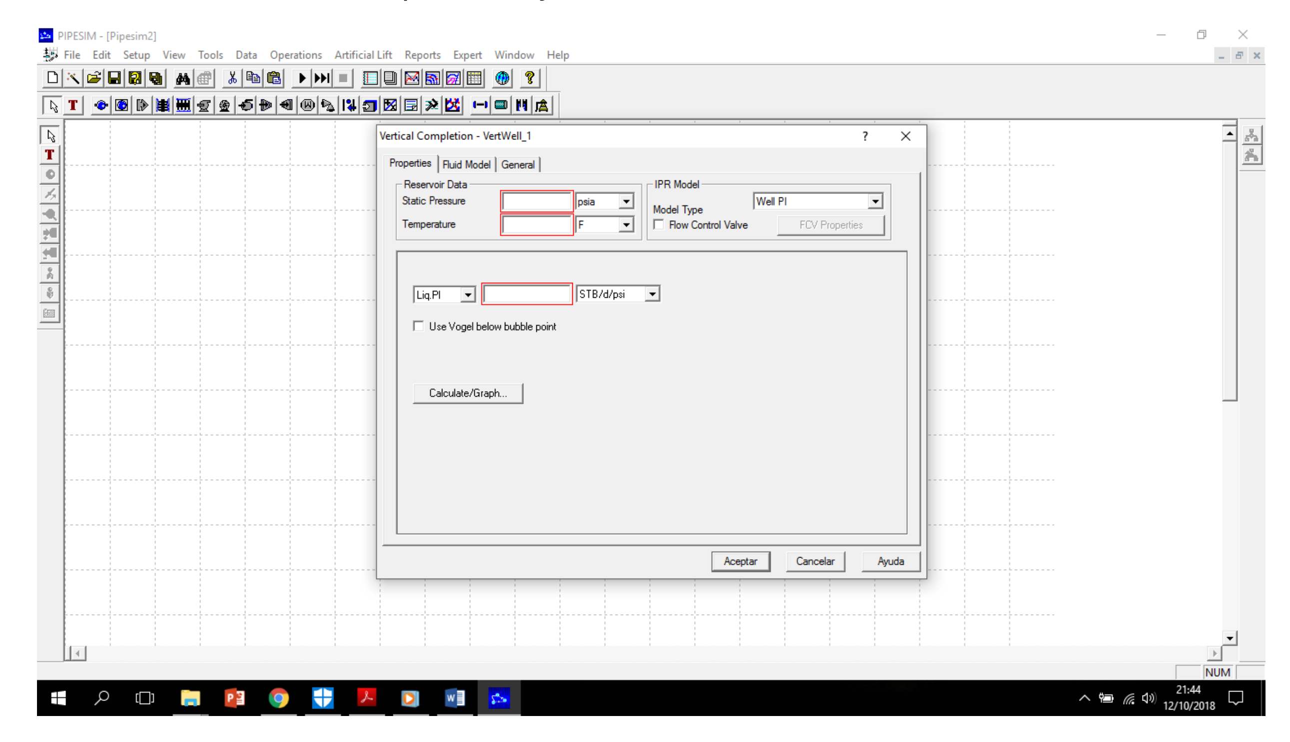
- Abrir el programa y seleccionamos well performance analysis



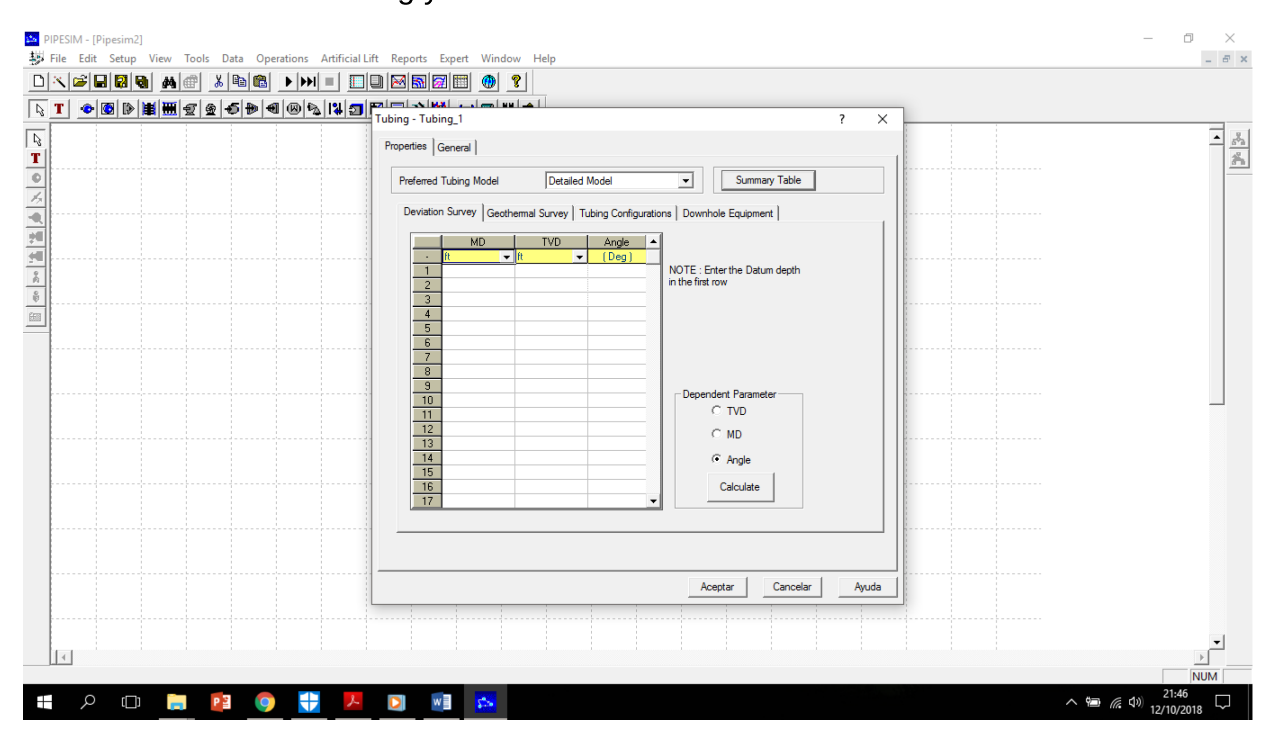
- Agremamos las siguientes figuras a la pantalla



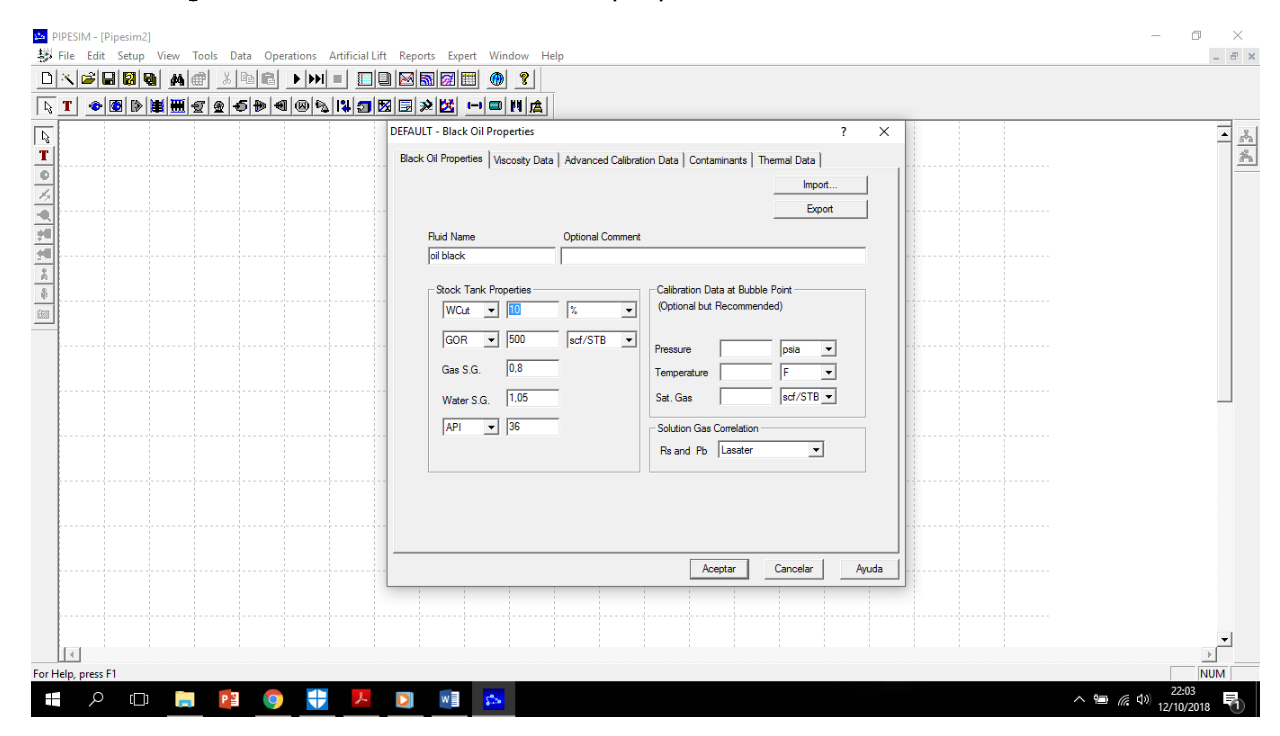
- Doble click en completacion y llenamos los datos



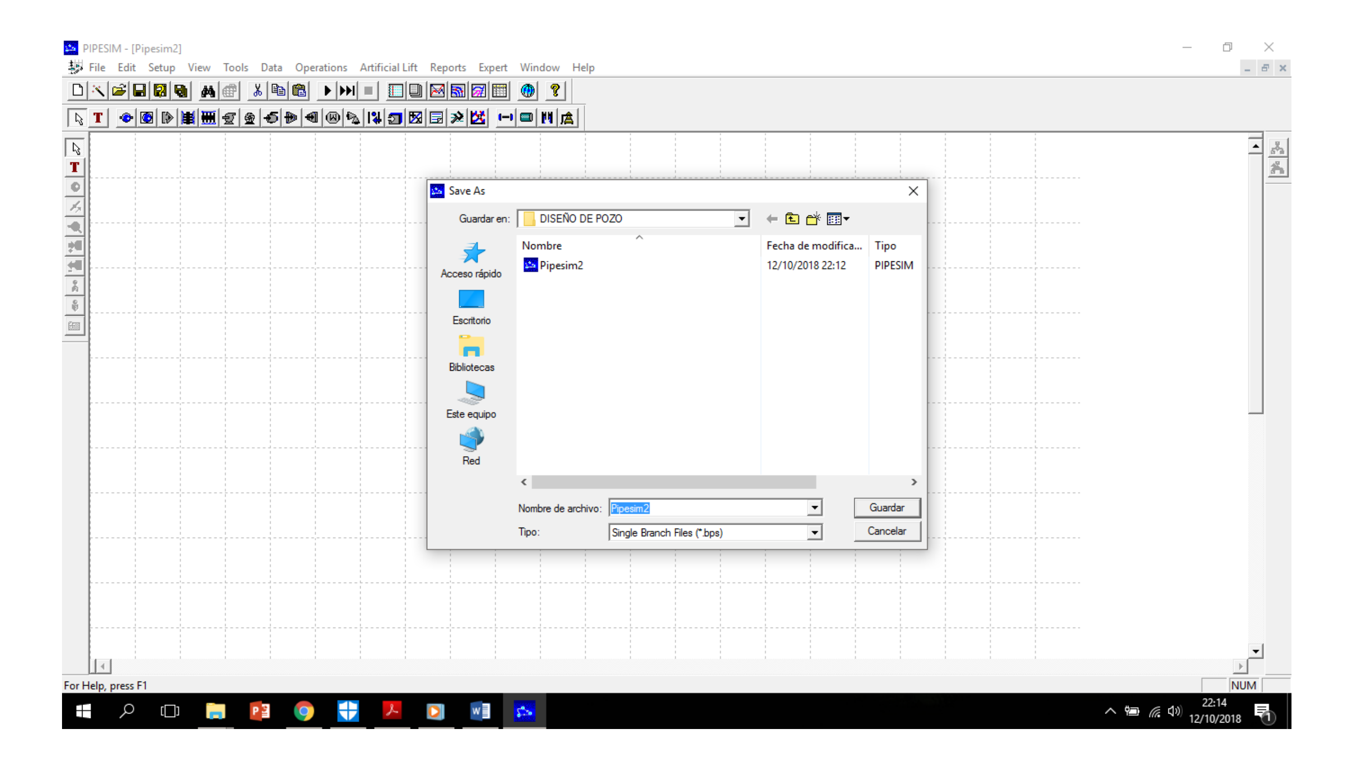
- Doble click en tubing y llenar datos



- De igual manera introducimos las propiedades del fluido



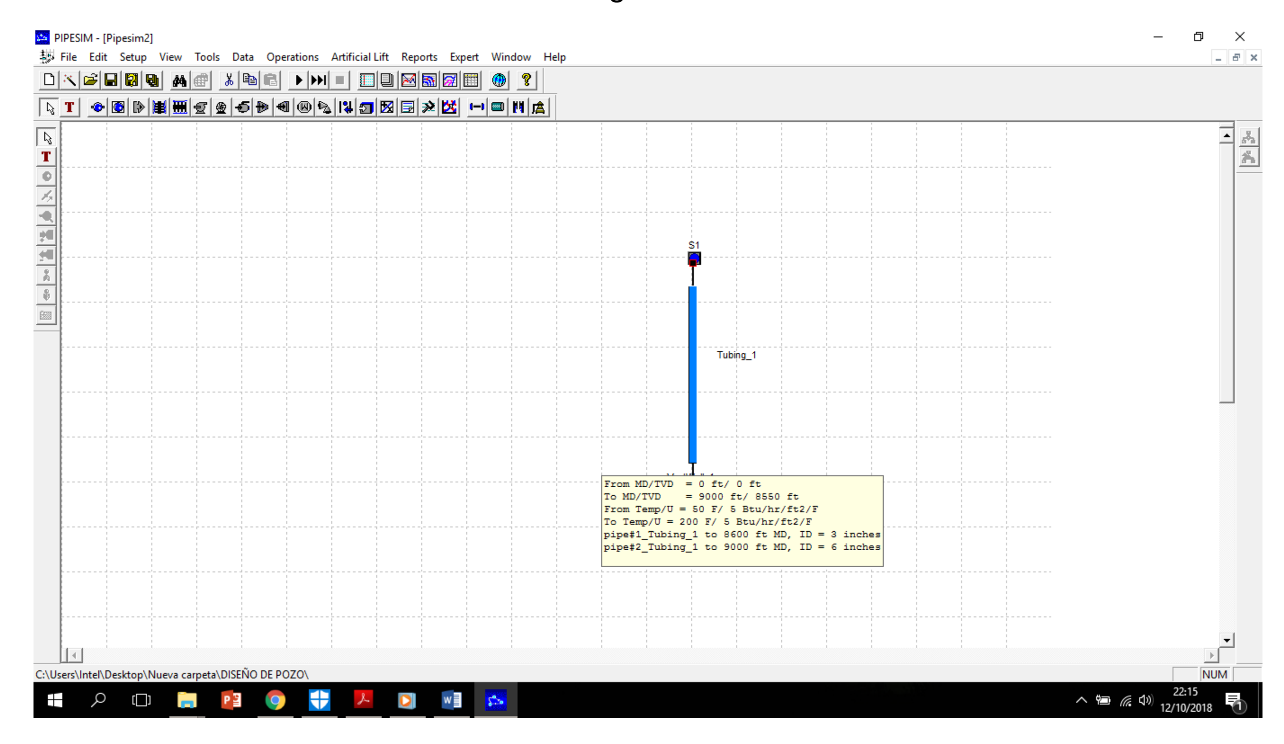
- Guardamos el archivo



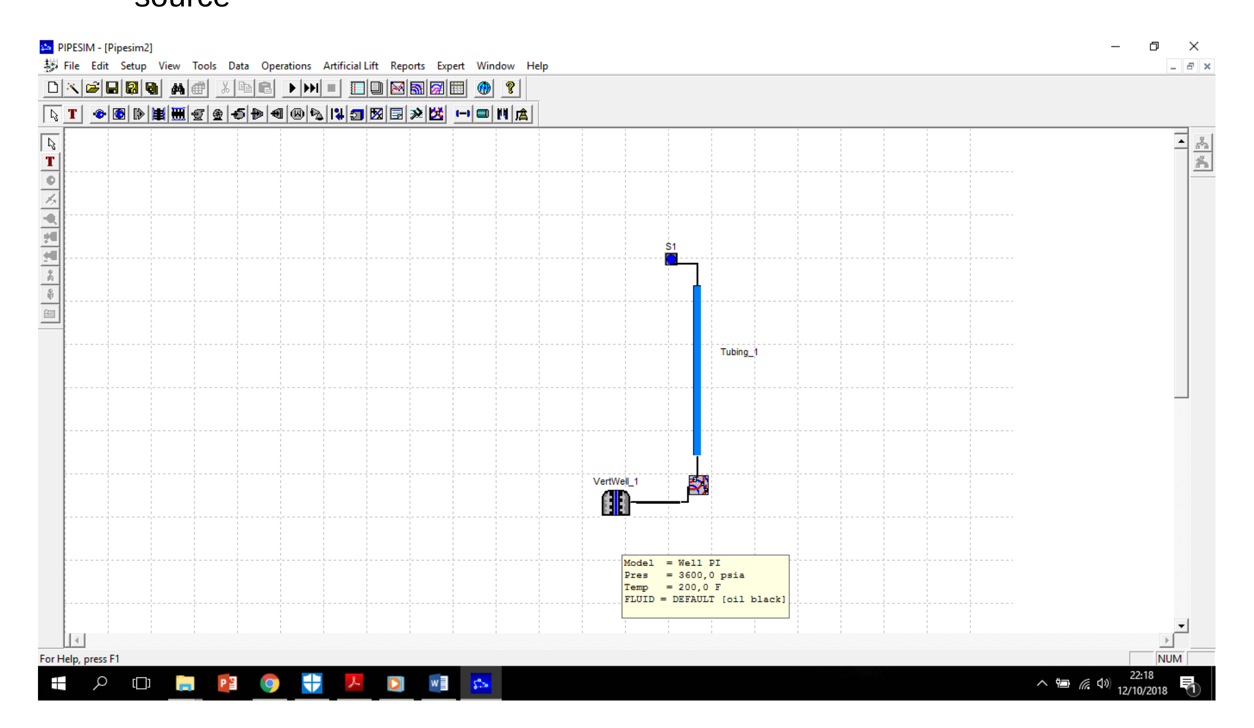
EJERCICIO 4

Realizando el Análisis NODAL

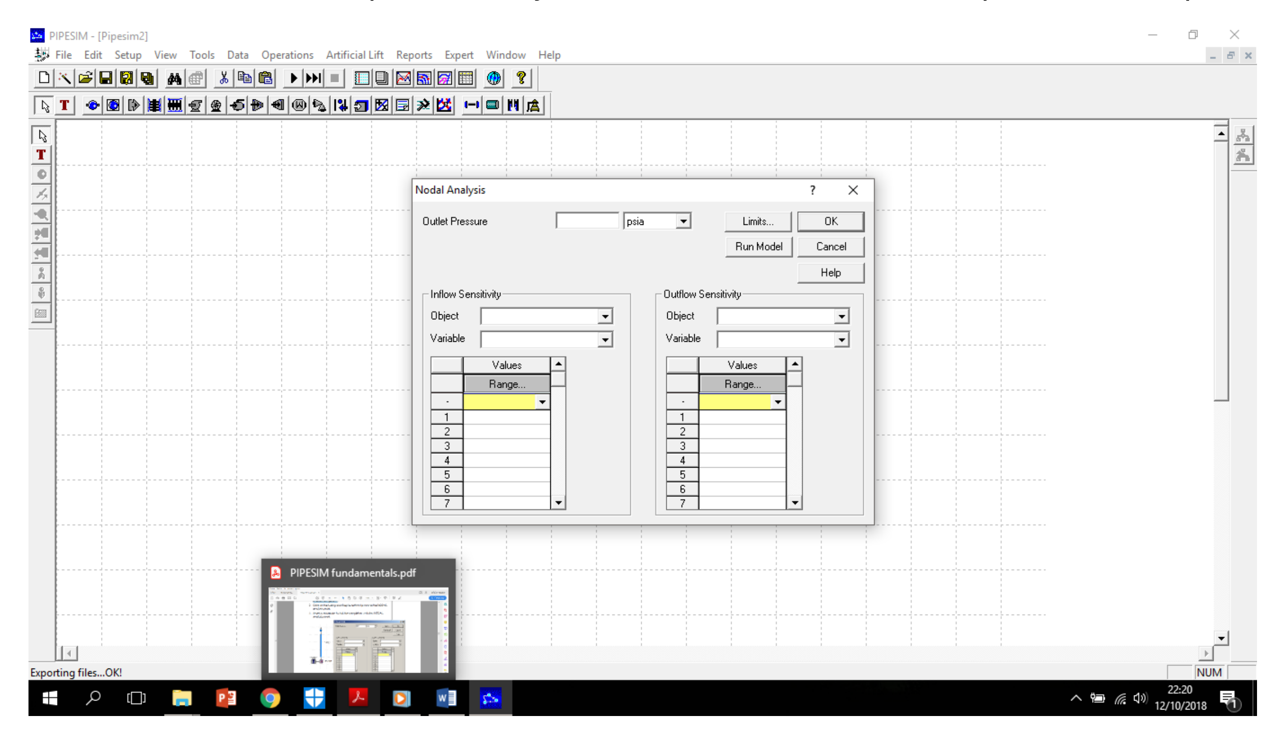
- Abrimos el archivo anteriormente guardado



- Introducimos el análisis nodal de las herramientas y lo unimos a la tubería y source



- Damos click en operaciones y seleccionamos análisis nodal ponemos 300 psi



- Luego damos click en correr programa

